

Claims

[c1] What is claimed is:

1. An optical disk drive for reading/writing data on an optical disk, the optical disk drive comprising a mounting plate, a guide bar, and a pickup head guided by the guide bar and moveable along a lengthwise direction of the guide bar, the pickup head reading/writing data on the optical disk by an optical means, the optical disk drive comprising:

a fixing structure for positioning the guide bar on the mounting plate, the fixing structure comprising a fixed joint and a flexible pressure-providing joint, the fixed joint rigidly fixing one end of the guide bar to the mounting plate, the flexible pressure-providing joint positioning another end of the guide bar on the mounting plate, and the two ends of the guide bar fixed in their relative positions due to a flatness of the mounting plate and despite a positioning action of the fixing structure such that linear movement of the pickup head is guided by the guide bar.

[c2] 2. The optical disk drive of claim 1 wherein the flexible pressure-providing joint includes a stop block and an

elastic member positioned on the mounting plate, the corresponding end of the guide bar is positioned between the stop block and the elastic member and is flexibly retained between the stop block and the elastic member by the elastic force generated when the flexible pressure-providing joint is in contact with the stop block.

[c3] 3.The optical disk drive of claim 2 further comprising:
a base fixed on the mounting plate;
a spindle motor positioned on the base for driving the rotation of the optical disk; and
a plurality of pitch adjusting apparatuses installed at different positions between the base and the spindle motor, each pitch adjusting apparatus comprising a spring having two sides adjacent to the base and the spindle motor to separate the base and the spindle motor, and a screw connecting the base and the spindle motor to limit separation of the base and the spindle motor;
wherein a plane in which the optical disk driven by the spindle motor is located is adjusted by changing relative distances between the spindle motor and the base at different positions to balance the springs and the corresponding screws.

[c4] 4.The optical disk drive of claim 3 wherein the elastic member of the flexible pressure-providing joint is con-

nected to one of the springs of the pitch adjusting apparatuses.

[c5] 5.The optical disk drive of claim 1 wherein the fixed joint has a supporting part positioned on the mounting plate and a fastening apparatus screwed to the mounting plate so that the corresponding end of the guide bar is positioned between the supporting part and the fastening apparatus, and the fastening apparatus holds the guide bar against the supporting part to closely position the guide bar between the supporting part and the fastening apparatus.

[c6] 6.An optical disk drive for reading/writing data on an optical disk, the optical disk drive comprising:
a mounting plate;
a base fixed on the mounting plate;
a spindle motor movably positioned on the base to drive the rotation of the optical disk;
a plurality of pitch adjusting apparatuses, each of the pitch adjusting apparatuses comprising a spring having two sides adjacent to the base and the spindle motor to separate the base and the spindle motor, and a screw connecting the base and the spindle motor to limit separation of the base and the spindle motor, wherein a plane in which the optical disk driven by the spindle motor is located is adjusted by changing relative distances

between the spindle motor and the base at different positions to balance the springs and the corresponding screws;

a guide bar having a first end and a second end along a lengthwise direction of the guide bar positioned on the mounting plate;

a pickup head mounted on the guide bar and movable along the lengthwise direction of the guide bar between the first end and the second end, the pickup head capable of reading/writing data on the optical disk by an optical means; and

a fixing structure comprising a fixed joint and a flexible pressure-providing joint, the fixed joint rigidly fixing the first end of the guide bar to the mounting plate, the flexible pressure-providing joint positioning the second end of the guide bar on the mounting plate, and the first end and the second end of the guide bar fixed in their relative positions due to a flatness of the mounting plate and despite a positioning action of the fixing structure such that linear movement of the pickup head being guided by the guide bar.

[c7] 7.The optical disk drive of claim 6 wherein the flexible pressure-providing joint of the fixing structure has a stop block installed on the mounting plate, and an elastic member formed of and extending from one of the

springs of the plurality of pitch adjusting apparatuses; the second end of the guide bar is flexibly retained between the stop block and the elastic member by the elastic force generated when the elastic member is in contact with the second end of the guide bar.

- [c8] 8. The optical disk drive of claim 6 wherein the fixed joint of the fixing structure has a supporting part positioned on the mounting plate and a fastening apparatus screwed to the mounting plate so that the first end of the guide bar is positioned between the supporting part and the fastening apparatus, and the fastening apparatus holds the first end of the guide bar against the supporting part to rigidly and closely position the first end of the guide bar between the supporting part and the fastening apparatus.